

AD-A269 023



A PRELIMINARY REVIEW
OF
ENVIRONMENTAL REQUIREMENTS AND CONCERNS

BASED ON THE ANNOUNCEMENT
OF THE PROPOSED CLOSURE OF
GEORGE AIR FORCE BASE, CALIFORNIA

DTIC
ELECTE
AUG 31 1993
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PREPARED BY THE ENVIRONMENTAL PLANNING AND COMPLIANCE BRANCH
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GEORGE AIR FORCE BASE, CALIFORNIA
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16 JUL 93

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(ATTN: Mr. Mauby)

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**GEORGE AIR FORCE BASE
COMMUNITY MEMBERS/REGULATORY AGENCIES**

COMMUNITY MEMBERS/POPULATION

<u>VICTOR VALLEY</u>	<u>225,000</u>
CITY OF ADELANTO	(11,000)
CITY OF APPLE VALLEY	(50,000)
CITY OF HESPERIA	(60,000)
CITY OF VICTORVILLE	(28,000)
COMMUNITY GROWTH RATE	11% - 15% ANNUALLY

ENVIRONMENTAL REGULATORY AGENCIES

FEDERAL ENVIRONMENTAL PROTECTION AGENCY

Authority established by Order of the President with the consent of Congress during December 1970

Mandated to protect, preserve and enhance the environment of the United States

- Clean Air Act
- Clean Water Act
- Resource Conservation and Recovery Act
- Comprehensive Environmental Restoration and Liability Act

Delegates authority to State agencies

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LAHONTAN REGION

An agency of the State of California Water Resources Control Board

Preserve California water quality/quantity

- Water Pollution Control
 - Priority Chemical Review
 - Hazardous Waste Disposal to Land
 - Underground Storage Tank Program
 - Surveillance and Monitoring
 - Water Discharge Requirements
 - Clean Water Grants
- Water Rights
 - Appropriative (Surface) Water Rights
 - Groundwater Rights

**GEORGE AIR FORCE BASE
COMMUNITY MEMBERS/REGULATORY AGENCIES
(CONTINUED)**

**STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES
TOXICS SUBSTANCES CONTROL DIVISION**

Enforces State hazardous waste control laws and regulations.

- Chapter 6.5 - 6.9 of the California Health and Safety Code regarding the use, storage, transportation, treatment and disposal of hazardous materials and waste
- Titles 22 and 23 of the California Administrative Code which establishes rules and regulations (parallels the Federal hazardous waste regulations)

**STATE OF CALIFORNIA DEPARTMENT OF HEALTH SERVICES
PUBLIC WATER SUPPLY BRANCH**

Assures domestic water supplies meet standards of quality and reliability by enforcing the following:

- California Safe Drinking Water Act
- Domestic Water Quality and Monitoring Regulations
- California Water Works Standards
- Certification of Water Treatment Facility Operations

COUNTY OF SAN BERNARDINO ENVIRONMENTAL HEALTH SERVICES

Created by ordinance adopted by the San Bernardino County Board of Supervisors

Assures consumer and environmental protection

- Regulates State health and safety code standards
- Enforces hazardous waste spill and cleanup laws
- Preserves adequate groundwater quality

COUNTY OF SAN BERNARDINO AIR POLLUTION CONTROL DISTRICT

An agency of the State of California Air Resources Board

Protects and enhances air quality of San Bernardino County desert areas

- Assures compliance with ambient air quality standards
- Regulates stationary sources
- Administers special programs

**GEORGE AIR FORCE BASE
INSTALLATION RESTORATION PROGRAM (IRP)**

PERTINENT REGULATIONS

The Air Force, acting on its own initiative, implemented the IRP in 1980 to clean up health-threatening hazardous waste sites on its installations.

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) recognize the Department of Defense's (DOD) right to conduct its own cleanup activities.

S211 of SARA [codified at 10 USC S2701 as the Defense Environmental Restoration Program (DERP), a special law which does not directly amend CERCLA, and amounts to an "IRP Law"] also says DOD has the right to conduct its own cleanups.

Note: George AFB is not currently on the National Priorities List.

Assembly Bill 3374 requires studies of all active and inactive landfill sites in the State. This legislation mandates sampling and analysis for both sanitary and industrial (toxic) landfills. There are two sets of requirements:

- Air: Four inactive landfills at George AFB require monitoring for methane gas production which will be accomplished through existing IRP contracts and funded by the Defense Environmental Restoration Account. These studies are in the design phase with actual work scheduled for completion in Fiscal Year 1989.

- Water: Negotiations with the California Regional Water Quality Control Board (CRWQCB), Lahontan Region, resulted in the agreement to submit existing IRP sampling and analysis investigation reports as meeting the Calderon Solid Waste Assessment Test water monitoring requirements. These documents were submitted to the staff of the CRWQCB during first quarter of Fiscal Year 1989.

REGULATORY OVERSIGHT PROVIDED BY:

Federal Environmental Protection Agency

California Regional Water Quality Control Board

California Department of Health Services:
Toxics Substances Control Division
Public Water Supply Branch

County of San Bernardino:
Environmental Health Services
Desert Air Pollution Control District

**GEORGE AIR FORCE BASE
INSTALLATION RESTORATION PROGRAM
(CONTINUED)**

REQUIREMENTS

The IRP has four phases:

Phase I, **Records Search**, is an installation-wide study that identifies and assesses past disposal sites based on files searches, interviews and site visits. Five thousand dollars were spent at George AFB in support of this phase of the IRP.

Phase II, **Remedial Investigation**, confirms the presence or absence of contamination, determines the extent and degree of contamination, and provides the basis for selecting the appropriate type of remedial action. During this phase, groundwater, soil and sediment samples are collected and analyzed. Two million, one-hundred eighty thousand dollars have been spent at George AFB to date in support of our Phase II investigations.

Phase III, **Technology Development**, efforts are not undertaken for each site but are intended to improve site investigation and cleanup technology through research, development and testing. Site investigations at George AFB have not required Phase III activities since adequate cleanup technology has already been developed for contaminants discovered here.

Phase IV is conducted in two stages. **Phase IVA Feasibility Study** documents the development, evaluation and selection of alternatives to clean up the hazards posed by a waste disposal site. Selection of the best alternative is based on engineering feasibility, cost, environmental effects, public health effects and compliance with regulatory requirements. **Phase IVB** is **Implementation** of the selected alternative and normally includes design, construction and management methods. Long-term monitoring is often performed in association with site cleanup to assure compliance with contaminant standards or achievement of cleanup goals.

George AFB is currently working on numerous IRP sites. The trichloroethylene (TCE) contaminated groundwater cleanup in the northeast area of the Base is the site that has been worked most aggressively. The Site S-20 cleanup, which is in Phase IVB, will remove and replace an abandoned storm/industrial drain. Several smaller sites which will require similar cleanup activities are contaminated with fuel-related hydrocarbons (Site S-3, Waste Petroleum-oil-and-lubricants (POL) Leach Field; Site S-5a, Fire Fighting Training Facility; and Site S-5b, Waste Burn Pit). Additionally, the Southeast Disposal Area of the Base is being monitored for benzene and gross alpha radiation. A detailed review of each of these sites follows.

**GEORGE AIR FORCE BASE
INSTALLATION RESTORATION PROGRAM
TCE CONTAMINATED GROUNDWATER CLEANUP**

HISTORY:

TCE contamination was confirmed within the Northeast Disposal Area of George AFB during January 1986. The field investigation has shown the area of contamination to be approximately 1-1/4 miles long by 3/4 mile wide, extending 3/4 mile beyond the base boundary. The contaminated plume lies within an upper aquifer which does not serve as a potable water source.

The highest level of contamination found to date is 560 parts per billion (ppb). The California State Action Level is 5 ppb. Above 5 ppb, the State requires action of some kind by the responsible agency in order to remedy the situation.

HEALTH EFFECTS OF TCE:

TCE is a suspected human carcinogen. The Action Level of 5 ppb means that one extra case of cancer can be expected in a population of one million people who use water containing 5 ppb of TCE for 70 years.

THE APPROVED CLEANUP OPTION WILL CONSIST OF:

- Extraction of contaminated groundwater via on-base and off-base wells.
- Treatment by two air strippers to remove all detectable TCE.
- System will treat approximately 750,000 gallons of water per day.
- Duration of cleanup will be 20 to 30 years.

WATER REUSE OPTIONS:

The treated water will be used to water the Base golf course should closure be disapproved.

The treated water will be used to recharge the upper aquifer should closure be approved.

COSTS TO DATE:

Phase IVA costs to date in support of TCE cleanup are \$1,095,000.

The estimated cost to construct the TCE contaminated groundwater cleanup facilities is \$1,700,000.

IMPACTS OF CLOSURE

- System maintenance
- Local program management
- Long-term monitoring requirements to be negotiated

**GEORGE AIR FORCE BASE
INSTALLATION RESTORATION PROGRAM
SITE S-20, INDUSTRIAL STORM DRAIN**

REQUIREMENTS

Site S-20, the Industrial Storm Drain and Outfall Ditch, has been in operation since the early 1940s. In the past, the storm drain received industrial wastes, including waste oils, fuels, solvents, and paint strippers as well as storm water. The storm drain consists of over 3.5 miles of piping in two parallel reaches, the East Storm Drain and the West Storm Drain. A section of the East Storm Drain is constructed of perforated corrugated metal pipe. The primary contaminant of concern in the East Storm Drain is lead. In compliance with the agreement made between the Base and the regulatory community, it will be necessary to remove, dispose of and replace the East Storm Drain. The decision on the cleanup alternative for the West Storm Drain has not yet been made. However, it is anticipated that the preferred alternative will include some type of "hot spot" decontamination and closure in place. Sections of the East Line may be grouted to insure that residual contamination will not migrate.

STATUS

East Storm Drain:

- The removal and replacement of the East Storm Drain is at 95 percent design

West Storm Drain:

- Field investigation is complete. It is necessary to meet with the regulatory community to negotiate the extent of cleanup .

CURRENT COSTS

Cost estimate for the removal, disposal and replacement of the East Storm Drain is \$3,000,000. The cost for the remediation of the West Storm Drain is unknown at this time due to the uncertainty as to the extent of cleanup required.

IMPACTS OF CLOSURE

East Storm Drain: Current schedule provides for the completion of this remediation by June 1990 which is prior to the estimated Base closure date. Therefore, there should be no impact to this effort by closure.

West Storm Drain: Depending on the outcome of negotiations with the regulatory community, a contract to manage remediation may be required. Any required remediation should be expedited in order to complete contracts prior to closure.

**GEORGE AIR FORCE BASE
INSTALLATION RESTORATION PROGRAM
MISCELLANEOUS SITES**

**SITE S-3, WASTE POL LEACH FIELD/SITE S-5A FIRE FIGHTING TRAINING
FACILITY/SITE S-5B WASTE BURN PIT**

Sites S-3, S-5a and S-5b are all significantly contaminated with fuel-related hydrocarbons and require similar cleanup activities. Total Petroleum Hydrocarbon concentrations range from less than 100 mg/kg to over 542,000 mg/kg. The method chosen for the remediation of these three sites is enhanced bioreclamation. This technique consists of excavating the contaminated soils, relocating these soils to a lined and monitored pit, allowing the soils to naturally biodegrade the contaminant with the enhancement of the addition of oxygen and the bacteria known to biodegrade hydrocarbons. It is estimated that the remediation of these soils, including construction and closure of the treatment pit, will take two years.

SOUTHEAST DISPOSAL AREA

The Southeast Disposal Area is the site of five inactive landfills and one munitions disposal site. Five monitoring wells are located in the area. Groundwater samples have indicated the presence of benzene and gross alpha radiation in concentrations exceeding Applicable or Relevant and Appropriate Requirements (ARARs). The most current groundwater sampling, however, did not detect benzene, suggesting that previous detections may have been erroneous. Current groundwater sampling also detected gross alpha, gross beta, and total uranium at concentrations less than ARARs. The presence of radionuclides is believed to be due to natural occurrences in soil and/or groundwater. Monitoring of this site will continue with one more round of sampling to occur in 1989. No further investigations have been recommended for this site. However, due to the toxicity of benzene and the danger of contamination to groundwater by radionuclides, the regulatory community may require long-term monitoring of this site.

**GEORGE AIR FORCE BASE
INDUSTRIAL WASTEWATER PRETREATMENT**

PERTINENT REGULATIONS

Victor Valley Wastewater Reclamation Authority (VWVRA) Rules and Regulations for Sewerage Service, Ordinance 80-19, adopted 8 October 1980

VWVPA Amendments to Rules and Regulations, adopted 29 January 1987

REQUIREMENTS

The VWVRA is the regional, publicly-owned treatment works having jurisdiction over George AFB wastewater discharges. The Base must install a new industrial wastewater collection system in order to segregate industrial wastewater and meet new discharge standards as outlined in the January 1987 Amendments. On 9 April 1987, a "Corrective Action Order" (CAO) was issued to the Base, which requires the construction of the industrial wastewater collection/treatment system. The CAO specifies that facilities must be operational by June 1990.

STATUS

The design of the new system is currently 60 percent complete.

CURRENT COSTS

Design costs including surveying and testing through 100 percent equal \$253,738.

Construction costs are estimated as:

P-341	Install collection system & construct pretreatment facilities	\$ 990,000
O&M	Repair abandoned facilities (24-hour retention)	<u>\$ 440,000</u>
	Total Project Cost	\$1,430,000

IMPACTS OF CLOSURE

Further design of these facilities has been placed on hold. Should the closure list be rejected by Congress, design of the pretreatment system will be resumed. On the other hand, if the closure list is approved, the design contract and plans to construct the pretreatment facilities will be cancelled. This was briefed to the VWVRA Board on 26 January 1989.

If closure is approved, the 60 percent design drawings will be turned over to the VWVRA Board for their future use.

The Base is continuing efforts to minimize industrial discharges to the plant. Ongoing programs which will continue include soap substitution, source control, routine pumping of base oil/water separators and product substitution.

GEORGE AIR FORCE BASE ASBESTOS

PERTINENT REGULATIONS

- 40 Code of Federal Regulations 61, Subpart M - National Emissions Standards for Hazardous Air Pollutants (NESHAPS) Asbestos Regulations (San Bernardino County Air Pollution Control District)
- 29 Code of Federal Regulations 1910.1001 - Occupational Health and Safety (OSHA) (Asbestos Regulations) and State of California OSHA

REQUIREMENTS

Friable asbestos must be assessed for health and environmental risks. Once the risks are determined, the following options are available:

- Long-term monitoring of the material's condition
- Enclosure within solid structures
- Encapsulation with sprayed-on coatings
- Removal of the material

STATUS

Number of Buildings to be Surveyed	1,970 (including 1,641 Military Family Housing Units)
Number Surveyed	184 (102 Base, 82 Housing Units)
Percent Containing Asbestos	Approximately 40% (mostly in mechanical rooms and floor tile)

CURRENT COSTS

Abatement costs may be as high as \$15.00 per square foot and are extremely tentative. Refer to Closure Cost Assumptions/Calculations.

IMPACTS OF CLOSURE

The survey of materials containing asbestos must be completed prior to the disposition of the Base. Per Federal Property Management Regulations, the survey required for disclosure when a government property is disposed of consists of a records search of as-built blueprints and renovation records. George AFB has completed a destructive survey (taking samples and analyzing them for asbestos content) of approximately 10 percent of the existing facilities on-base. Options for completion of the survey include:

**GEORGE AIR FORCE BASE
ASBESTOS
(Continued)**

- Continue with the destructive survey, which will most likely require contractor assistance. (Estimate 5 - 25 cents per SF of floor space)

- Conduct a records search which will expedite the in-house effort. This will not provide a thorough analysis, since numerous layers of asbestos containing materials have been found (i.e., three layers of floor tile) in the facilities surveyed to date.

Degree of impacts will depend upon legal review of disclosure requirements, future liability, and the extent of required abatement.

CLOSURE COSTS ASSUMPTIONS/CALCULATIONS

There are 1,970 buildings on-base (including 1,641 housing units) with a total square footage of floor space of 4,629,926, approximately 10 percent of which has been surveyed for asbestos. Forty percent of those facilities tested had asbestos containing materials (ACM) (80% nonfriable, 20% friable). Average costs for removal range from \$5.00 - \$15.00 per square foot. Costs for encapsulation of friable asbestos range from \$2.40 - \$6.79 per square foot.

Currently, the Base removes asbestos in facilities scheduled for renovation, repair or demolition. Monitoring of the condition of the asbestos is performed in the remaining facilities. This, in effect, spreads removal costs over time.

If closure becomes a reality, there are several alternatives to dealing with asbestos. The first would be to remove all ACM on the base; the second would be to remove only the friable asbestos and leave the nonfriable in place; the third would be to encapsulate the friable and leave the nonfriable in place; and the fourth would be to leave all asbestos as-is. All options would require the completion of the survey of existing facilities, using either in-house forces or by contract. Survey costs by contract range from 5 - 25 cents per square foot of floor space.

The estimated abatement costs are as follows:

(1) Remove All ACM	1,852,000 SF*	\$ 5.00/SF (low)	\$ 9,260,000
Remove All ACM	1,852,000 SF	\$15.00/SF (high)	\$27,780,000
(2) Remove Friable	370,000 SF**	\$ 5.00/SF (low)	\$ 1,850,000
Remove Friable	370,000 SF	\$15.00/SF (high)	\$ 5,550,000

*1,852,000 SF Total ACM = (4,629,926 Total SF) x (40%)

** 370,000 SF friable asbestos = (1,852,000 SF Total ACM) x (20%)

**GEORGE AIR FORCE BASE
ASBESTOS
(Continued)**

(3) Encapsulate Friable	370,000 SF	\$ 2.40/SF (low)	\$ 888,000
Encapsulate Friable	370,000 SF	\$ 6.79/SF (high)	\$ 2,512,000
(4) Leave in place	1,852,000 SF	\$0.00/SF	\$ -

(Note: Legal ramifications of this alternative are still to be determined.)

**GEORGE AIR FORCE BASE
UNDERGROUND STORAGE TANKS (UST)**

PERTINENT REGULATIONS

San Bernardino County Code Division 8 to Title 3, Underground Storage Tank Standards (San Bernardino County Department of Environmental Health Services)

California Health and Safety Code, Chart 6.7, Section 25280, Monitoring Alternatives for Underground Tanks (State of California Department of Health Services)

REQUIREMENTS

Permanently abandon and remove 14 unused USTs. One tank is eligible to be removed with Defense Environmental Restoration Account funding (abandoned prior to September 1984). Permits to close each tank are required by San Bernardino Department of Environmental Health Services.

Temporarily close in place 63 USTs that can be reactivated by the next function to use the Base. The possibility that the Base will be used as an airfield by the next owner cannot be ruled out. Therefore, the existing USTs may be required by the new owner. No permits are required for temporary closure. County regulations allow temporary closure for up to two years. A plan that outlines the methods used for temporary closure must be submitted and approved by San Bernardino County Department of Health Services prior to the start of work.

STATUS

Abandon and Remove 14 USTs: Plans were already in place to accomplish this project prior to the announcement of Base closure. The design is at the 60 percent stage and the work should be completed in CY 89.

Temporary Closure in Place of 63 USTs: Project to be designed and implemented prior to Base closure.

CURRENT COST ESTIMATES (Assume \$10,200/Tank Removal; \$4,000/Tank Closure)

Remove 14 USTs	\$142,800	
Temporary Closure of 63 USTs	<u>\$252,000</u>	
Total	\$394,800	
Remove 77 USTs	\$785,400	
Temporary Closure followed by Removal of 63 USTs	\$894,600	[\$252,000 + (63 x \$10,200)]

**GEORGE AIR FORCE BASE
UNDERGROUND STORAGE TANKS
(CONTINUED)**

IMPACTS OF CLOSURE

Since the temporarily closed tanks might exceed the allowed two year time frame, a waiver from this requirement may be required. County regulations mandate the quarterly inspection of any temporarily closed tank. This may necessitate letting a contract for the periodic inspection of the tanks. Additionally, the San Bernardino County Department of Environmental Health Services may require groundwater monitoring, vadose zone monitoring and/or a leak detection program. This determination will be made by the Department of Health Services when the plan for temporary closure is submitted to them.

Consider the option for the future occupants of the site to acquire the USTs for their use. Remove only those USTs for which the General Services Administration is unable to transfer ownership.

Consider DOD liability associated with risk of future leakers. Note: Soils at George AFB are not highly corrosive. Of 22 tanks removed to date, only one was found to be leaking, and that was due to improper installation.

**GEORGE AIR FORCE BASE
OIL/WATER SEPARATORS**

PERTINENT REGULATIONS

California Administrative Code, Title 22

The San Bernardino County Department of Health Services has authority to regulate underground storage tanks (UST). They have determined that oil/water separators are merely "sumps in a line" and not USTs because they are designed to have a constant flow going through them. Therefore, they are not subject to regulation under their UST rules.

Victor Valley Wastewater Reclamation Authority (VWRA) Ordinance, which regulates the strength of the sewage that is received by the VWRA sewage treatment plant.

REQUIREMENTS

Close or transfer the oil/water separator system to the new owner in compliance with all regulations.

STATUS

Number of separators: 33

IMPACTS OF CLOSURE

- Determine if the new owner requires the existing oil/water separator system. If not, develop and implement a plan for the closure of these structures that may include proper disposal of the separators and resulting sludges. If the new owner will require the use of the oil/water separator system, develop and implement a plan to decontaminate the system and dispose of the resulting wastewater and sludges.

- Estimated pumping and decontamination costs for 33 oil/water separators:

Pumping and decontamination: Includes pumping and removal in all compartments of the separator of oils/volatiles and aqueous and sludge layers, including grit and sand. All visible residues have to be removed from all surfaces of the separator. All surfaces have to be steam-cleaned and the residual water properly disposed of. Any visible or obvious obstructions have to be removed from the inlet and outlet pipes, where applicable.

Separators contain priority and non-priority contaminants

Estimated costs for pumping and decontamination (based on project GEO 87-0156 A/B, completed Mar 88): \$ 462,000

**GEORGE AIR FORCE BASE
ABOVEGROUND BULK STORAGE TANKS FOR JP-4**

PERTINENT REGULATIONS

There are currently no San Bernardino County Department of Environmental Health Service regulations for the closure of large aboveground storage tanks. There may, however, be fire and health regulations and Air Force guidance on the closure of this type of tank.

REQUIREMENTS

The tanks must be drained and purged of flammable gases to minimize the risk of accidental ignition or explosion. Determine if the new owner requires the use of this type of facility.

STATUS

<u>Number of tanks</u>	<u>Size of tanks</u>
2	10,000 barrels (430,000 gallons)
2	15,000 barrels (645,000 gallons)
1	5,000 barrels (215,000 gallons)

CURRENT COSTS

Unknown until requirements are identified.

IMPACTS OF CLOSURE

If the new owner cannot use the existing tankage, the five aboveground tanks must be demolished/disposed of properly. Air Force requirements for the closure and demolition of this type of tank must be identified. A contract for the actual demolition must be let.

In lieu of demolition, two options for transfer of ownership exist for these tanks. Ownership could be transferred to Edwards AFB as added emergency storage capacity, or the tanks could be sold/leased to California Nevada Pipe Line Company as added in-line storage.

These options will need further investigation to determine desirability, costs, and impacts associated with each.

**GEORGE AIR FORCE BASE
AIR POLLUTION ABATEMENT ISSUES**

PERTINENT REGULATIONS

San Bernardino County Air Pollution Control District Rules 101 through 1113.

REQUIREMENTS

Acquire and keep current permits to construct and permits to operate regulated equipment, machinery and structures in accordance with the San Bernardino County Air Pollution Control District rules.

STATUS

George AFB is located in a region that is an attainment area for all ambient air quality requirements, except ozone, resulting in requirements that are significantly less strict than many other areas of California.

Recently, new requirements for the installation of Phase I and Phase II vapor recovery systems on fuel dispensing equipment were adopted by the San Bernardino County Air Pollution Control District. Compliance with all vapor recovery requirements is mandated by April 1990. Base environmental staff has requested an informal determination from the Air Pollution Control District regarding obtaining a waiver from these requirements in view of the pending Base closure.

CURRENT COSTS

\$11,455.00 in annual fees for permits to operate equipment regulated by the San Bernardino County Air Pollution Control District.

IMPACTS OF CLOSURE

It is possible to transfer air emission credits that the Base owns and dispose of them in one of the the following ways:

- Sell them to a local developing industry.
- Transfer them with the existing Base property at the time that the ownership changes, if the new owner is planning to use the permitted facility for exactly the same function that the existing owner (USAF) currently employs.
- Transfer the credits with the existing Base property at the time that the ownership changes in a ratio of 1.2 Base-owned credits to 1.0 future use. This is done if the new owner's use of the facilities is different than the uses that the existing owner employs.

**GEORGE AIR FORCE BASE
AIR POLLUTION ABATEMENT ISSUES
(CONTINUED)**

Address the issue of Phase I and Phase II vapor recovery requirements so that the regulatory requirements can be met in view of base closure.

The U.S. Department of Justice filed a lawsuit during January 1989 against the South Coast Air Quality Management District, charging that pollution fees levied on Southern California military bases violate Federal law. There is a question as to how this lawsuit may impact our ability to expedite environmental programs in support of closure.

**GEORGE AIR FORCE BASE
POLYCHLORINATED BIPHENYLS (PCB)**

PERTINENT REGULATIONS

40 Code of Federal Regulations 761, Toxic Substances Control Act, Requirements for the Management of PCBs. (Environmental Protection Agency, Region IX)

REQUIREMENTS

Remove and replace 15 PCB transformers (PCB concentrations ≥ 500 ppm) and 24 PCB contaminated transformers (PCB concentrations > 50 ppm and < 500 ppm). Additionally, it will be necessary to remove and replace 10 large capacitors.

STATUS

<u>TYPE</u>	<u>NUMBER</u>	<u>DISPOSITION</u>	<u>EST COMP DATE</u>
PCB Transformers (> 500 ppm)	15	Programmed for Disposal	FY 91
PCB-Contaminated Transformers (> 50 and < 500 ppm)	24	Programmed for Disposal	FY 91
Large PCB Capacitors	10	To be Programmed for Disposal	FY 91

CURRENT COST ESTIMATE

Removal	\$ 98,000
Transport and dispose	<u>\$392,000</u>
Subtotal	\$490,000
Replacement	<u>\$160,000</u>
Total	\$650,000

IMPACTS OF CLOSURE

The removal of PCB transformers and PCB-contaminated transformers must be completed prior to Base closure. May need to expedite the funding of projects in support of this program.

In view of closure, replacement may be required.

GEORGE AIR FORCE BASE RADON

PERTINENT REGULATIONS

No government regulations are in force regarding radon exposures since it is a naturally occurring phenomenon. However, the Air Force has mandated the Radon Assessment and Mitigation Program (RAMP) in order to evaluate the level of radon exposure to military members and dependents in Military Family Housing (MFH) units. Additionally, RAMP provides a means for the mitigation of these exposures via minor construction in MFH units.

REQUIREMENTS

It is necessary to sample and evaluate Base structures for radon content and to further consider the level of human exposure that has occurred or will occur. Some survey work has already been performed but it has not been determined whether this level of sampling is adequate.

STATUS

Total number of MFH units on-base: 1,641
(422 Buildings)

Number of MFH units tested: 30
(Approximately 2%)

Number exceeding Action Level (4.0 pCi/L): 0

No mitigating measures are required in view of the above results, according to the current RAMP guidance.

CURRENT COSTS

Costs should not be incurred to mitigate radon exposures based on the above analysis.

IMPACTS OF CLOSURE

The Air Force will be required to disclose radon levels in housing units, at a minimum. It has not been determined whether the above survey is extensive enough to accurately disclose radon levels to the new owner.

**GEORGE AIR FORCE BASE
RANGE CLOSURES**

SUPERIOR VALLEY RANGE

LAND AREA - 48,560 acres

PERTINENT AGREEMENTS - Interservice Support Agreement No. N60530-81181-180 between Naval Weapons Center, China Lake, California, and 831st Air Division, George AFB, California, dated October 1984

CLOSURE REQUIREMENTS

- Restricted airspace shall be returned to China Lake
- Remove/restore premises to original or better condition
- Sample, analyze, and close/monitor two existing landfills
- Close disposal site for thermal treatment of waste explosives

CLOSURE IMPACTS/OPTIONS

- Transfer to other USAF unit for continued use
- Transfer to other DOD activity for continued use
- Close range
- All three options will require closure of the burn pit (thermal treatment) and the two landfills
- Range closure will necessitate explosive ordnance disposal (EOD) clearance; expected to be minimal due to almost exclusive use of practice ordnances

LEACH LAKE TACTICAL RANGE

LAND AREA - 91,000 acres

PERTINENT AGREEMENTS - Interservice Support Agreement No. W80WLM-85250-001 between National Training Center, Fort Irwin, California, and 831st Air Division, George AFB, California, dated March 1986

CLOSURE REQUIREMENTS

- Maintenance and refurbishing of target complexes.
- Removal/disposal of all air-delivered ordnance. Ordnance must be blown in place or removed; burial or abandonment in place not permitted. Note: Ordnance used on range: High-explosive; cluster bombs with high explosive; 40mm rounds; 30mm and 20mm high-explosive/incendiary projectiles; and high explosive/smoke/practice 2.75" rockets.

**GEORGE AIR FORCE BASE
RANGE CLOSURES
(CONTINUED)**

CLOSURE IMPACTS/OPTIONS

- Transfer to other USAF unit for continued use
- Transfer to other DOD activity for continued use
- Close range impacted: No EOD Clearance
- Close range cleared: National Training Center has estimated cost for EOD clearance at \$973,700,000 due to the variety of ordnance used on the range

CULTURAL RESOURCES

A sensitivity survey of the range was performed between 21 and 24 June 1988. Eleven sites with components of interest to paleontology, prehistoric archeology or history were identified. Two of these sites appear to be eligible to the National Register of Historic Places. Requirement to protect these sites may prohibit a subsurface clearance.

CUDDEBACK RANGE

LAND AREA - 7584 acres

PERTINENT AGREEMENTS - Public Law 88-46, Cuddeback Lake Air Force Range, California, dated June 1963

RANGE HISTORY/CLOSURE REQUIREMENTS

- Range inactive since 1981. Scheduled for return to the Bureau of Land Management (BLM) to be used as grazing lands
- Public Law 88-46 requires USAF to make lands safe for future users before returning lands to BLM
- Surface EOD performed 28 Nov-8 Dec 83
- Subsurface ordnance clearance not accomplished
- Existing facilities, including asbestos containing material and a 1,500-gallon underground storage tank containing waste oil, must be disposed of
- Sample, analyze, and close/monitor existing landfill

CLOSURE IMPACTS/OPTIONS

- USAF committed to remove existing structures and make site safe; closure would only speed up the process
- Estimates for demolition of existing structures are on the order of \$60,000
- Estimates for subsurface EOD clearance should it be required are on the order of \$76,000,000

**GEORGE AIR FORCE BASE
MISCELLANEOUS ENVIRONMENTAL CLOSURES**

FIRE FIGHTING TRAINING FACILITY

The Fire Fighting Training Facility (FFTF) consists of a concrete pad which is 100 feet in diameter, an oil/water separator to separate fuel components from wastewater, and an evaporation tank to evaporate residual contaminated water. These facilities were refurbished in 1987. Prior to this upgrade, fuel for the training fires was sprayed directly on an asphalt pad, which had severely degraded and did not contain the fuel as required. The underlying soils are contaminated with fuel components and require clean up. Please see the IRP, Miscellaneous Site Information for Site S-5a, for additional information.

HAZARDOUS WASTE STORAGE YARD

The Defense Reutilization and Marketing Office (DRMO) operates a permitted Hazardous Waste Storage Yard located at George AFB. This facility must be closed according to requirements contained in the Resource Conservation and Recovery Act and California Administrative Code, Title 22. All of the waste stored in the Yard must be properly disposed of and all residual contamination must be remediated. The Base has a history of disposing of all waste in a timely manner in cooperation with the DRMO. Therefore, it is anticipated that waste disposal will not pose a significant problem. Soil samples were taken as part of the IRP Remedial Investigation effort. Results from these tests indicate that no significant contamination of the Hazardous Waste Storage Yard has occurred. It is anticipated that only relatively minor cleanup efforts will be required for this site.

ABANDONED WASTEWATER TREATMENT PLANT

George AFB operated a wastewater treatment plant for sanitary sewage prior to December 1980. All sanitary, commercial and industrial wastewaters were discharged to and treated by this plant. The industrial wastes included paint-related materials, petroleum-oil-and-lubricants, corrosive materials and fuels. Closure of this site will begin with studies to determine the extent of contamination, if any. If necessary, a feasibility study will be prepared that identifies and evaluates potential cleanup alternatives. It is anticipated that this effort and any cleanup required will be eligible for funding by the Defense Environmental Restoration Account.

GEORGE AIR FORCE BASE WATER SOURCE

WATER SOURCE: George AFB is currently working to obtain a legal, reliable source of water in support of the current and future needs of the Base.

History:

George AFB currently diverts and uses water for domestic and industrial purposes from the Mojave River Basin. The Base and the City of Adelanto are jointly licensed to pump 2.5 cubic feet per second (cfs). The water wells are located on land owned by the City of Adelanto and leased to the Base. Of critical importance, the authorized 2.5 cfs maximum pumping rate does not provide even one-quarter of the Base's summer peak water needs.

In June 1988, the California State Water Resources Control Board (CSWRCB) made the determination that a state of overdraft exists within the Mojave River Basin. This resulted in the denial of numerous pending water rights requests, including the application for 5.4 cfs average monthly diversion rate filed by George AFB during 1985.

George AFB submitted a second application during December 1987 requesting the right to divert 14 cfs (5,900 acre-feet) from the Mojave River. This application was filed to correct the original request from the average monthly diversion rate of 5.4 cfs to the maximum monthly diversion rate of 14 cfs. (Water rights are granted for a maximum rate as well as a maximum annual use.) Regulations did not allow CSWRCB staff to adjust the rate of the original application; therefore, a second application was necessary. This application for 14 cfs was not denied by the Board during June 1988, since it falls into a later review cycle. Approval of this application is contingent upon George AFB providing factual data that water is available at the point of diversion for the Base.

Radian Corporation was hired to perform a water availability study in support of our application for 14 cfs additional water rights. Based upon data collected and modeling performed by Radian Corporation, it appears that the Mojave River actually underflows George AFB. This means the Base may be a riparian user, not required to obtain a water rights permit from the CSWRCB.

Current Strategy For Riparian Rights: The following actions are required in order to support the case that George AFB is a riparian user:

George AFB sent a letter to the CWRCB requesting they delay further processing of our pending application for 14 cfs diversion rights, in view of the study results. The Board was informed that a technical report would be prepared and forwarded during February 1989 for their review and concurrence that the River does indeed underly the Base.

**GEORGE AIR FORCE BASE
WATER SOURCE
(Continued)**

Radian Corporation was contracted to prepare the technical report and petition to the CSWRCB for a determination of the underflow issue.

A title search of the Base's land must be performed to determine the water rights associated with the property at the time the government purchased the land. If there was a severance of the patented riparian or surface water rights when the tracts of land were split off from the original patented land grant, George AFB will not qualify as a riparian user. The U.S. Army Corps of Engineers has requested a proposal from Kronick, Moskovitz, Tiedemann and Girard to conduct the title search. Additionally, Mr Tiedemann, who specializes in California water law, will review the government's strategy to pursue the Base's rights as a riparian user.

Upon completion of the title search and hydrologic studies, the Base will petition the CSWRCB to make a determination that the Mojave River underflows George AFB; thereby, defining the Base as a riparian user.

Base Closure Impacts:

It is essential that the Base continue in its efforts to establish a legal source of water at this time. Should the closure list be rejected by Congress, George AFB will need a legal source of water in order to continue to support our mission. On the other hand, if the closure list is approved, the value of this site for future use within the community is directly dependent upon the availability of water.